

CLAIMS

WHAT IS CLAIMED IS:

1. A method for printing a product, article or other object at a printing station and for enhancing the application of UV light at a curing station to UV photo initiators in a UV curable ink applied to the product, article or other object at the printing station, comprising the steps of:
 - printing a UV-curable ink with a printing head on a product, article or other object at a printing station;
 - providing sets of UV-LED arrays of UV-LED chips at a curing station, and
 - causing relative movement between the sets of UV-LED arrays and the printed product, article or other object.
2. The method of claim 1 wherein the printing head is reciprocated transversely of the product, article or other object together with the sets of UV-LED arrays.
3. The method of claim 1 wherein a further set of UV-LED arrays are positioned adjacent the printing head at the curing station and the product, article or other object is indexed or moved under the further set of UV-LED arrays.
4. The method of claim 3 wherein UV-LED chips in the further set of UV-LED arrays emit light at a different wavelength or wavelengths than the wavelength of the light emitted by the first named sets of UV-LED arrays.
5. The method of claim 3 wherein the further set of UV-LED arrays are reciprocated or oscillated as the product, article or other object is indexed or moved under the further set of UV-LED arrays.
6. The method of claim 3 the step of maintaining the intensity of the UV light emitted from the further set of UV-LED arrays generally constant
7. The method of claim 3 wherein the UV-LED chips in each array are staggered.

8. The method of claim 1 the step of maintaining the intensity of the UV light emitted from the sets of UV-LED arrays generally constant.
9. The method of claim 1 wherein the UV-LED chips in each array are staggered.
10. The method of claim 1 wherein at least one fluorescent lamp is located at the curing station and the printed product, article or other object is indexed or moved under the fluorescent lamp.
11. The method of claim 1 wherein at least one heat lamp is positioned at the curing station at the entrance end to the curing station for heating freshly printed ink.
12. The method of claim 11 wherein said heat lamp is an infra-red heat lamp.
13. A UV-curing apparatus for use in conjunction with an ink jet printer or other printer for enhancing the application of UV light at a curing station to UV photo initiators in a UV curable ink applied to a product, article or other object at the printing station, comprising:
 - sets of UV-LED arrays of UV-LED chips at the curing station adjacent a printing head at the printing station; and,
 - a mechanism for causing relative movement between the sets of UV-LED arrays and the printed product, article or other object.
14. The UV curing apparatus of claim 13 wherein said mechanism is constructed and arranged to reciprocate the printing head and said sets of UV-LED arrays together transversely of the product, article or other object.
15. The apparatus of claim 13 wherein a further set of UV-LED arrays are positioned adjacent the printing head at the curing station and a mechanism is provided for indexing or moving the product, article or other object under said further set of UV-LED arrays.

16. The apparatus of claim 15 including UV-LED chips in said further set of UV-LED arrays that emit light at a different wavelength or wavelengths that are different than the wavelength of the light emitted by said first named sets of UV-LED arrays.
17. The apparatus of claim 15 including a mechanism for reciprocating or oscillating said further set of UV-LED arrays as the product, article or other object is indexed or moved under said further set of UV-LED arrays.
18. The apparatus of claim 15 including a system for maintaining the intensity of the UV light emitted from said further set of UV-LED arrays generally constant.
19. The apparatus of claim 15 wherein the UV-LED chips in each array are staggered.
20. The apparatus of claim 13 including a system for maintaining the intensity of the UV light emitted from said sets of UV-LED arrays generally constant
21. The apparatus of claim 13 wherein the UV-LED chips in each array are staggered.
22. The apparatus of claim 13 wherein at least one fluorescent lamp is located at the curing station and the printed product, article or other object is indexed or moved under said fluorescent lamp.
23. The apparatus of claim 13 wherein at least one heat lamp is positioned at the curing station at the entrance end to the curing station for heating freshly printed ink.
24. The apparatus of claim 23 wherein said heat lamp is an infra-red heat lamp.